

Electric quarter-turn actuators

HQ-series



Features

- Light weight & robust design
- High corrosion resistance
- Wide range of voltages available
- Various output torque from 80 Nm to 11,000 Nm
- Flexible option: LCU, RBP, PCU, etc

Enclosure: weather proof - IP67, IP68, NEMA4, 4X & 6
 flame proof - Ex d IIB T4
 (IECEX, ATEX, CSA, KCCs)
 dust ignition proof - Ex tb IIIC T135°C Db
 (IECEX, ATEX, KCCs)



Performance

Model	Max. output torque	Operating time(sec) 50/60Hz	Mounting bore size	dc	Rated current [A], [50/60 Hz]								Duty rate	No. of handle turn	Weight
					ac, 1-phase, 50/60 Hz										
					24 V	100 V	110 V	200 V	220 V	380 V	440 V	460 V			
HQ-008	8	16/13	20	3.7	1.3/1.3	1.2/1.1	0.7/0.6	0.6/0.6	0.2/0.3	0.6/0.4	NA	70	10	7	
HQ-010	10	20/17	20	4	1.3/1.3	1.2/1.1	0.7/0.7	0.7/0.6	0.2/0.3	0.6/0.4	NA	70	10	7	
HQ-015	15	25/21	22	5.3	2.4/2.2	2.1/2.0	1.1/1.1	1.0/1.0	0.6/0.4	0.6/0.4	0.6/0.4	70	11	17	
HQ-020	20	25/21	22	6.5	2.5/2.3	2.2/2.1	1.2/1.2	1.1/1.1	0.7/0.5	0.6/0.4	0.6/0.4	70	11	17	
HQ-030	30	31/26	35	8.6	2.3/2.7	2.1/2.4	1.1/1.4	1.0/1.3	0.6/0.5	0.4/0.3	0.4/0.3	70	13.5	22	
HQ-050	50	31/26	35	NA	3.6/4.6	3.3/4.2	1.9/2.1	1.7/1.9	0.9/0.8	0.8/0.5	0.7/0.5	70	13.5	23	
HQ-060	60	31/26	35	NA	3.8/4.9	3.4/4.4	2.1/2.3	1.9/2.0	1.0/0.9	1.4/0.9	1.3/0.9	70	13.5	23	
HQ-080	80	37/31	45	NA	6.0/6.3	5.4/5.7	2.9/3.1	2.6/2.8	1.3/1.0	1.7/0.9	1.6/0.9	70	16.5	29	
HQ-120	120	37/31	45	NA	7.2/7.6	6.5/6.9	3.1/3.3	2.8/3.0	1.5/1.1	1.8/1.0	1.7/0.9	70	16.5	29	
HQ-200	200	112/93	65	NA	6.0/6.3	5.4/5.7	3.4/3.3	3.1/3.0	1.4/1.0	1.7/1.0	1.6/0.9	50	49.5	75	
HQ-270	270	56/47	65	NA	7.2/7.4	6.3/6.7	3.5/3.4	3.2/3.1	1.5/1.1	1.8/1.0	1.7/0.9	50	49.5	75	
HQ-300	300	112/93	65	NA	7.2/7.6	6.5/6.9	3.1/3.3	2.8/3.0	1.5/1.1	1.8/1.0	1.7/0.9	50	49.5	75	
HQ-350	350	39/33	75	NA	24.9/19.2	22.6/17.4	12.4/9.5	11.2/8.7	4.2/3.0	3.8/2.6	3.6/2.5	40	42	75	
HQ-400	400	58/49	75	NA	24.9/19.2	22.6/17.4	12.4/9.6	11.2/8.7	4.2/3.0	3.8/2.6	3.6/2.5	40	42	75	
HQ-600	600	78/66	110	NA	16.3/11.6	14.8/10.5	9.9/7.0	9.0/6.3	3.6/3.3	2.1/1.8	2.0/1.7	40	84	215	
HQ-800	800	116/98	110	NA	16.3/11.6	14.8/10.5	9.9/7.0	9.0/6.3	3.6/3.3	2.1/1.8	2.0/1.7	40	84	215	
HQ-900	900	117/99	110	NA	16.3/11.6	14.8/10.5	9.9/7.0	9.0/6.3	3.6/3.3	2.1/1.8	2.0/1.7	40	84	215	
HQ-1000	1000	117/99	110	NA	16.3/11.6	14.8/10.5	9.9/7.0	9.0/6.3	3.6/3.3	2.1/1.8	2.0/1.7	40	126	305	
HQ-1100	1100	174/174	110	NA	16.3/11.6	14.8/10.5	9.9/7.0	9.0/6.3	3.6/3.3	2.1/1.8	2.0/1.7	40	126	305	

* Operating time can be changed according to customer requirement.

It should be confirmed with the supplier.

Standard Specification

Enclosure	Weatherproof enclosure IP67, NEMA 4, 4x, 6
Power supply	110/220 V ac 1 ph, 50/60 Hz 380/440/460 V ac 3 ph, 50/60 Hz, ±10%
Duty cycle (on-off)	S2 30 min [room temp., average load of 50% of max. torque]
Duty cycle (modulating)	S4 40-70%, 800-1200 starts/hour [room temp., average load of 50% of max. torque]
Motor	Induction motor [reversible motor]
Limit switches	Open/close, SPDT, 250 V ac 16 A rating
Additional limit switches	Open/close, SPDT, 250 V ac 16 A rating [except HQ-008/010]
Torque switches	Open/close, SPDT, 250 V ac 16 A rating [except HQ-008/010]
Stall protection/operating temp.	Built-in thermal protection, open at 150±5 °C / close at 97±15 °C
Travel angle	90±10° [0-110°]
Indicator	Continuous position indicator
Manual override	Declutching mechanism
Self locking	Provided by double worm gear
Mechanical stopper	2 x external adjustable screws
Space heater	HQ-008, 010: 5 W [12/24 V dc, 110/220 V ac], HQ-015-300: 10 W [12/24 V dc, 110/220 V ac], anti-condensation
Cable entries	Standard: 2 x PF3/4", Flame proof: 2 x NPT3/4" or 2 x M25 [HQ-008-300] Standard: 2 x PF3/4", 1 x PF1" [HQ-350-1100]
Lubrication	Standard: grease moly [EP type], option: Tribolube-18 [for low temp.]
Terminal block	Spring loaded lever push type
Materials	Steel, aluminium alloy, aluminium bronze, polycarbonate
Ambient temperature	Standard: -20-70 °C, Flame/dust ignition proof: -20-60 °C [except optional electronic board]
Ambient humidity	90% Max. RH [non-condensing]
Anti vibration	XYZ 10g, 0.2-34 Hz, 30 min
External coating	Anodizing treatment and polyester powder coating

Optional Specification

EXTB	Dust ignition proof enclosure [Ex tb IIIC T135°C]	HQ-008-HQ-300
EXD	Flame proof enclosure [Ex d IIB T4]	HQ-008-HQ-300
WTA	Watertight enclosure actuator [IP68 10 m 72 h]	HQ-series
PIU	Potentiometer unit [0-1 kΩ]	HQ-series
PCU	Proportional control unit [input/output: 0-10 V dc or 4-20 mA dc]	HQ-series
ATS	Additional torque switches [2 x SPDT, 250 V ac 16 A rating]	except HQ-008/010
LCU-B	integral control [LCU+IMS+phase protect indicator]	except HQ-008/010
LCU-C	Digital display control [LCU+IMS+auto phase discriminator]	except HQ-008/010
CPT	Current position transmitter [output: 4-20 mA dc]	HQ-series
EXT	Extension 120°, 180°, 270° turn	except HQ-200,300
RBP	Rechargeable battery backup	HQ-008, 010, 015, 020, 030
DCM	DC motor [24 V dc]	HQ-008, 010, 015, 020, 030
ADCM	Multi ac-dc 24 V [integral]	HQ-008, 010, 015, 020, 030
LPA	Lever plate actuator	except HQ-008/010
SLU	Signal lamp unit [white-power on, red-open, green-close, yellow-over torque]	except HQ-008/010
FPA1	Fire proofing actuator [1050±5 °C / 50 min]	Engineering consult in advance
FPA2	Fire proofing actuator [250±5 °C / 150 min]	Engineering consult in advance
SPD	Surge protection device [Max. 1.5 kW]	Engineering consult in advance



Standard



PCU card



PIU

Electric quarter-turn actuators HQ-series

HQ-008-HQ-1100

Quarter-turn actuator with high torque output (Max. 11,000 Nm)
 Enclosure: weather proof - IP67, IP68, NEMA 4, 4X & 6
 flame proof - Ex d IIB T4 (IECEX, ATEX, CSA, KCs)
 dust ignition proof - Ex tb IIIC T135°C Db (IECEX, ATEX, KCs)
 Motor power: 24 V dc,
 110/220 V ac, 1 ph, 50/60 Hz, ±10%,
 380/440/460 V, ac 3 ph, 50/60 Hz, ±10%
 4 x limit switches (standard) - except HQ-008/010
 2 x torque switches (standard) - except HQ-008/010
 Reversible motor (auto-cooling)
 On/off or modulating
 ISO 5211 mounting base



LCU-B (Integral control actuator)

Light, compact & integrated design
 Integral starter (mechanical or electrical)
 Local/remote control
 Wide range of electric power application
 -110/220 V ac, 1 ph, 50/60 Hz, ±10%,
 -220/380/440/460/480 V ac 3 ph, 50/60 Hz, ±10%
 Phase reversal protection with LED lamp signal (yellow)
 LED lamp signal
 ○ WHITE: POWER ● RED: OPEN/OPENING ● BLUE: REMOTE
 ● GREEN: CLOSE/CLOSING ● YELLOW: FAULT



LCU-C (Digital display control actuator)

Light, compact & integral design with LCD monitor
 Built-in auto phase discriminator (easy & convenient wiring)
 Digital indicator with numbers and bar graphs
 Separate terminal chamber
 (reliable against water, vibration, temp., etc.)



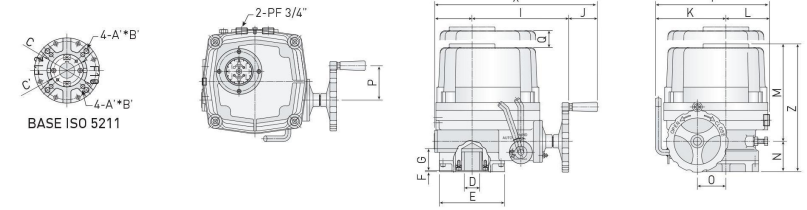
RBP (Rechargeable Battery Backup Actuator)

Emergency application in case of a power failure at site
 Local/remote control / 1-phase power
 NI-MH battery / Indication of battery level
 Automatic recharge / 5 operations per hour when fully charged
 LED lamp signal
 ○ WHITE: POWER ● GBR: BATTERY LEVEL ● BLUE: REMOTE
 ● YELLOW: FAULT ● RED: OPEN/OPENING ● GREEN: CLOSE/CLOSING

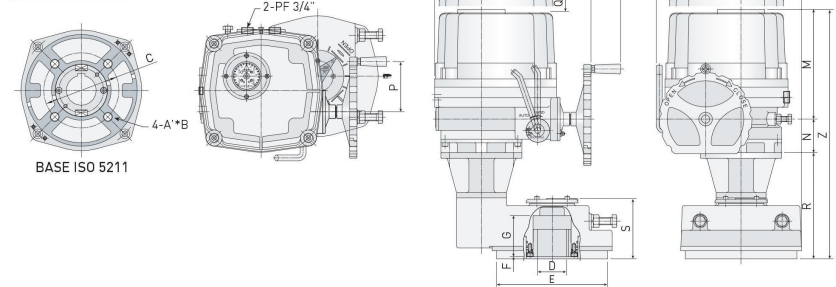


Dimensional Drawing

HQ-008 - HQ-120



HQ-200, HQ-300



Dimension

unit(mm)

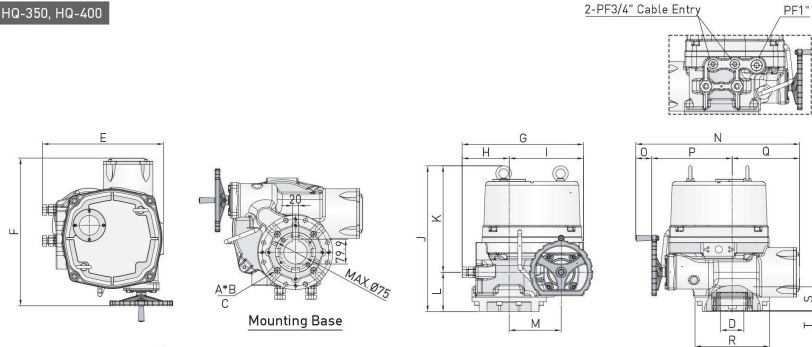
Model	BASE ISO 5211	A	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	X	Y	Z
	Ømm	B	Max.																		
HQ-008	F07	MB	20	88	3	32	50	157	51	100	70	182	53	40	60	120			258	170	235
HQ-010	F07	MB	20	88	3	32	50	157	51	100	70	182	53	40	60	120			258	170	235
HQ-015	F07/F10	M8/M10	22	125	3	42	73	200	65	142	87	200	68	54	78	160			338	229	268
HQ-020	F07/F10	M8/M10	22	125	3	42	73	200	65	142	87	200	68	54	78	160			338	229	268
HQ-030	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	221	69	65	78	180			368	259	290
HQ-050	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	235	69	65	78	180			368	259	304
HQ-060	F10/F12	M10/M12	35	148	3	49	82	221	65	160	99	235	69	65	78	180			368	259	304
HQ-080	F12/F14	M12/M16	45	178	3	57	103	242	65	186	111	256	74	78	110	210			410	297	330
HQ-120	F12/F14	M12/M16	45	178	3	57	103	242	65	186	111	256	74	78	110	210			410	297	330
HQ-200	F14*/F16	M16*/M20	65	245	5	90	103	242	65	186	133	256	74	78	110	210	233	133	410	319	563
HQ-300	F14*/F16	M16*/M20	65	245	5	90	103	242	65	186	133	256	74	78	110	210	233	133	410	319	563

*For HQ-200 and HQ-300, F14 is drilled by request.

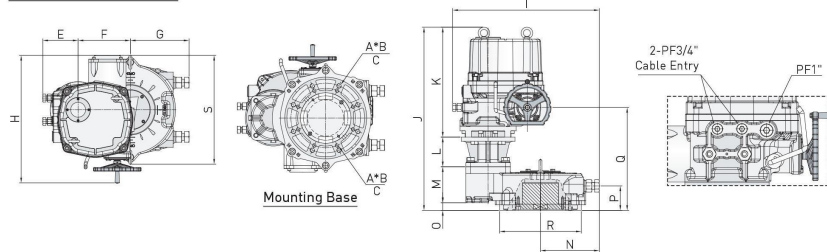
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Dimensional Drawing

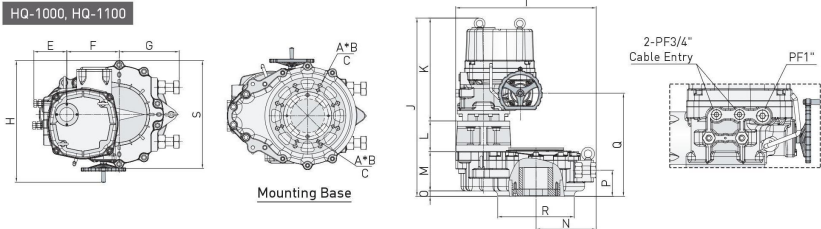
HQ-350, HQ-400



HQ-600, HQ-800, HQ-900



HQ-1000, HQ-1100

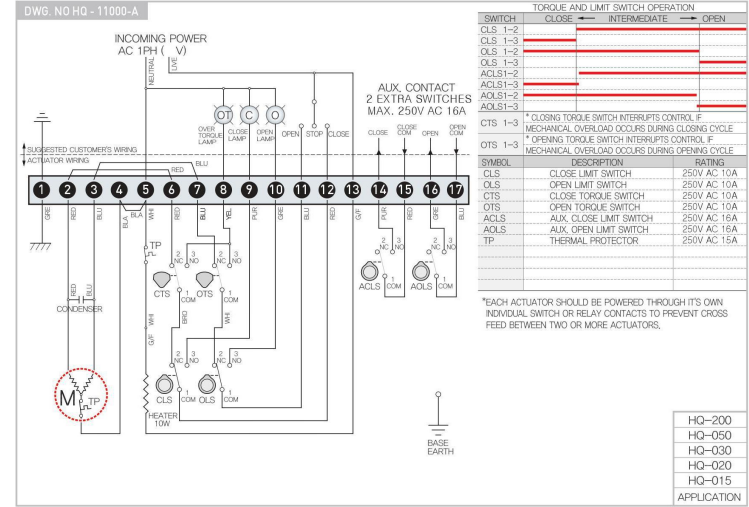


Dimension

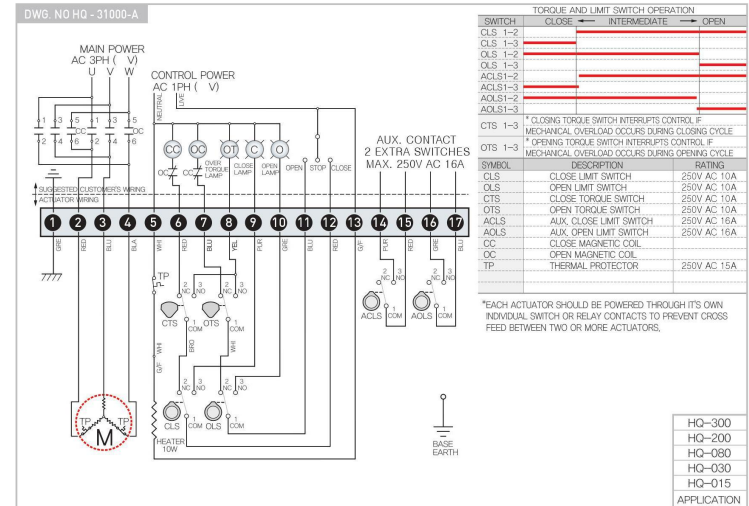
Model	BASE ISO 5211		D [Max.]	unit[mm]															
	A Ømm	B M20		E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
HQ-400	F16 Ø165	M20 30	75	391.5	476.5	391.5	151.5	240	470.6	343.6	127	168	528	51.5	259.5	217	Ø240	77	3
HQ-600	F25/F30 Ø254/ Ø298	M16/M20 30/35	100	151.5	224	252	546	627.5	784.6	470.6	127	154	252	33	105	441	Ø350	448	-
HQ-1100	F25/30 Ø254/ Ø298	M16/M20 30/35	100	151.5	240	275	556.5	642	815.6	470.6	140	180	275	25	120	472	Ø350	494	-

Wiring Diagram (On-Off Type)

ON-OFF CONTROL for 1-phase power supply

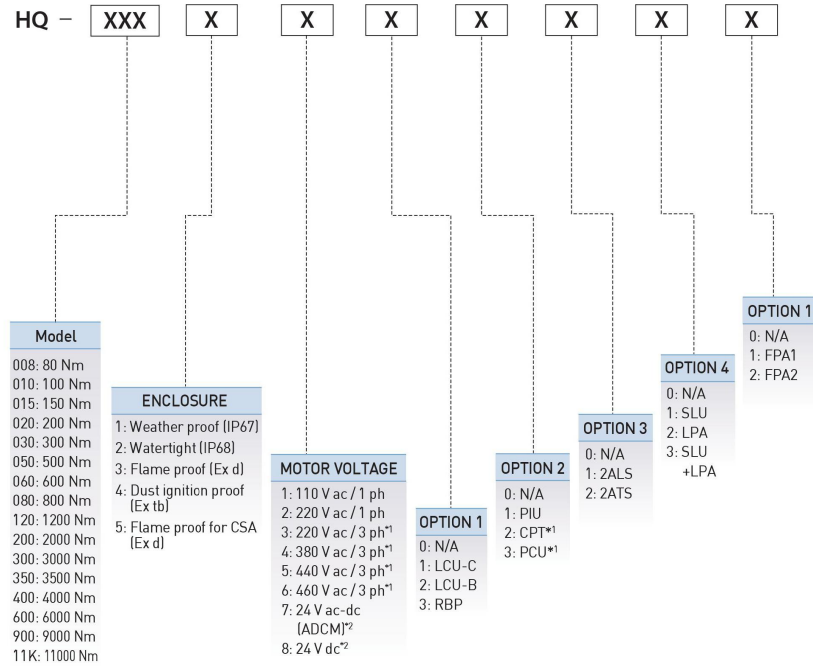


ON-OFF CONTROL for 3-phase power supply



Electric quarter-turn actuators HQ-series

HQ-series Ordering Code



Remarks

- * Asterisk¹: HQ-008-HQ-010 actuators shall not be applied to the above condition.
- * Asterisk²: HQ-050-HQ-300 actuators shall not be applied to the above condition.
- * 2ATS/ALS shall not be available for HQ-008 and for HQ-015-HQ-020 actuators with PCU.
- * For LCU-B option, HQ-015-HQ-300 actuators shall be available on the full condition of motor voltages except 24 V dc.
- * For LCU-C option, HQ-015-HQ-300 actuators shall be available on the condition of 220-460 V ac 3-phase and shall not be available with PIU/CPT.
- * RBP option is available only for HQ-008, HQ-010, HQ-015, HQ-020, HQ-030.
- * Consult with the supplier for more details.

HQ-004

Compact and light weight
Multi-voltage: (85~265 V ac, 1ph / 24 V dc)
Weatherproof enclosure (IP67)
Push button and manual lever
4 limit switches & captive cover bolt
Mechanical position indicator & LED lamp indicators (open/close)



Performance

Model	Maximum output torque		Operating time(sec.) 50/60 Hz	Mounting size		Supplying power & Rated current(A) 50/60 Hz, 1-phase			Duty rate IEC34-1	No. of handle turn	Weight
	kgf.m	Nm		Drilling	Bore	24 V dc	110 V ac	220 V ac			
HQ-004	3	29.4	7	F03/F04/F05	11	0.5	0.1/0.1	0.1/0.1	70	8	1.2

HQ-006

Compact and light weight with high grade aluminum alloy housing
High corrosion resistance due to hard anodizing
Polyester powder coating
Reversible motor with high torque and low current design
Tight sealing with o-ring system giving weatherproof (IP67)
Flame proof enclosure (option) - Ex d IIB T4 (IECEX, ATEX, KCs)
Manual handwheel



Performance

Model	Maximum output torque		Operating time(sec.) 50/60 Hz	Mounting size		Supplying power & Rated current(A) 50/60 Hz, 1-phase			Duty rate IEC34-1	No. of handle turn	Weight
	kgf.m	Nm		Drilling	Bore	24 V dc	110 V ac	220 V ac			
HQ-006	6	60	14 / 12	F03/F05/F07	14	1.7	0.4/0.4	0.2/0.2	35	8	3

Standard Specification

Enclosure	Weatherproof enclosure IP67
Power supply	110/220 V ac 1 ph, 50/60 Hz, ±10%
Duty cycle (on-off)	HQ-004: S2 60 min, HQ-006: S2 30 min (room temp., average load of 50% of max, torque)
Duty cycle (modulating)	HQ-006: S4 40%, 800~1200 starts/hour (room temp., average load of 50% of max, torque)
Motor	Induction motor (reversible motor)
Limit switches	Open/close, SPDT, 250 V ac 10 A rating
Additional limit switches	Open/close, SPDT, 250 V ac 10 A rating
Space heater	2 W (110/220 V ac), anti-condensation
Manual override	Handwheel (hexagon design)
Cable entries	Standard : 2 x PG13.5 tap (option: NPT1/2", PT1/2", PF1/2"), Flame proof : 2 x NPT3/4" or 2 x M20 or 2 x M25
Travel angle	320±10° (0~340°)
Ambient temperature	-20~70 °C, Flame proof (HQ-006): -20~60 °C
External coating	Polyester powder coating